

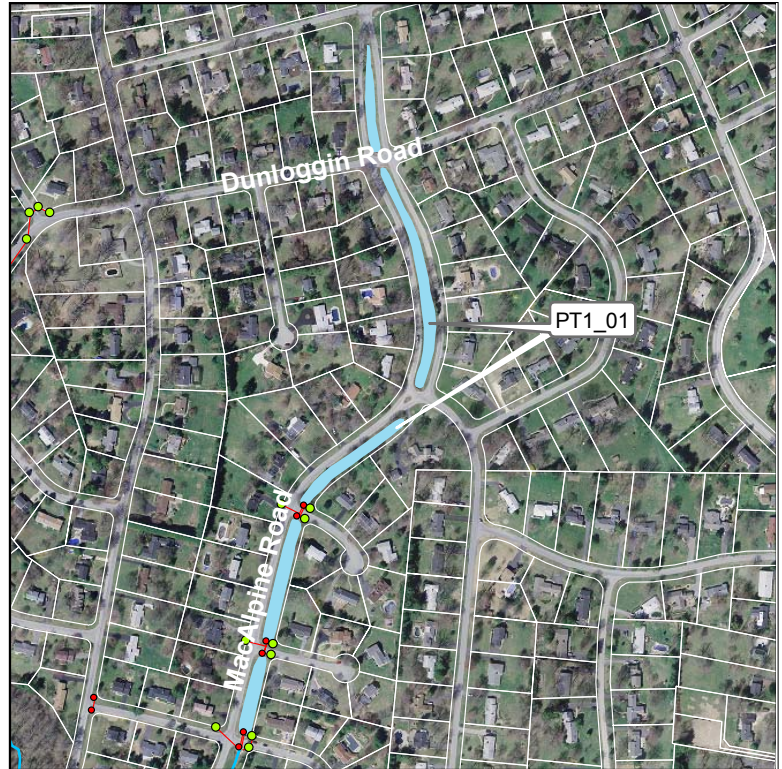
Proposed Project

Upper Little Patuxent

Project Number: PT1_01
Subwatershed: Plumtree 1

Project Type: Detention Area
Project Size: 164 acre drainage area/34 acres impervious

Project Location: Along MacAlpine Road between Waycross Road and Pebble Branch Road.



Project Description: In this neighborhood, there are wide, grassy medians that change to wide swales within the right-of-way. Currently, these medians and swales have stormdrains that transport the water between road crossings. The medians also have yard inlets that are connected to the stormdrains. At each crossing, the stormdrain pipe daylights, flows through the road culvert, and then flows into another stormdrain system. From the upstream end of the first median, the total length of piped stormdrain is more than 2,300 feet. Since the roads are open section, there is some water quality realized from runoff flowing across the grass. However, there is no peak flow attenuation.

This project would involve increasing the height of the existing yard inlets and modifying the road culverts and the underdrains to detain water while still allowing a controlled release. The openings for the underdrain located at the crossings would be blocked. However, large rainfall events would still have access to the underdrain system through the raised yard inlets, which will act as riser structures, and would still be able to use the full swale for storage. The medians are already sloped at approximately 2%, so no grading would be needed to insure that water conveys from one crossing to the next. However, there are approximately 270 feet of concrete ditch at the downstream end of this project that would be removed. Once these are removed, some grading would be required in the swales to ensure the bottom of the ditch is flat and has a constant slope that meets the culvert invert. The full channel protection volume cannot be met within the grassed areas, but this project would provide some peak flow attenuation.

Taking into account the aesthetic value of the neatly mowed medians and swales, it is possible that this project would not be readily accepted by the community. Although there would not always be water present in the grassed areas, it would take longer to drain than it does currently.

Project Benefits:

Channel Protection	This project would reduce the outfall velocity in the channel downstream of the concrete ditches during smaller rain storms, thus reducing erosion.
Water Quality	Water quality would be improved through reduction of suspended sediment.

Project Constraints:

Environmental	No environmental constraints or permitting issues are anticipated.
Property Ownership	This project would be contained within the right-of-way of the road.
Facility Access	Access to the site is excellent from roads.
Design / Construction	There would be some maintenance of traffic needed during construction.

Proposed Project

Upper Little Patuxent

Project Number: PT1_01

Subwatershed: Plumtree 1

Project Type: Detention Area

Project Size: 164 acre drainage area/34 acres impervious

Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL
Site Work				
Clear and Grub		AC	\$5,000.00	\$0
Pavement / Sidewalk Removal		SY	\$7.50	\$0
Curb-Gutter Removal		LF	\$10.00	\$0
Remove Pilot Channels	270	LF	\$6.00	\$1,620
Remove Barrel Pipe		LF	\$77.00	\$0
Construction				
Grading and Excavation (Class I)	165	CY	\$30.00	\$4,950
Hauling and Disposal	165	CY	\$20.00	\$3,300
Modify existing crossings	5	EA	\$700.00	\$3,500
Modify existing yard inlets	6	EA	\$2,000.00	\$12,000
Rip Rap Stabilization	150	LF	\$50.00	\$7,500
			Direct Construction Subtotal	\$32,870
Indirect Costs				
E/SC, MOT, MOS (20% of Directs or \$6,000)	1	LS	\$6,574.00	\$6,574
Construction Stakeout (\$1,000/Day)	6	Day	\$6,000.00	\$6,000
			Base Construction Cost	\$45,444
			Mobilization (10% of Directs or \$1,000)	\$3,287
			Subtotal	\$48,731
			Contingency (30%)	\$14,619
			Construction Subtotal	\$63,350
			Env't'l Studies / Permitting (5% of Construction or \$5,000)	\$5,000
			Engineering and Surveys (25% of Construction or \$75,000 maximum)	\$40,000
			Total Capital Cost	\$108,350
Operations and Maintenance Costs				
Annual Maintenance	6	Percent	\$1,972	
Discount Rate	5	Percent		
Expected Life	20	Years		
			Net Present Value of O&M Costs	\$24,578
			Life Cycle Cost	\$133,000